

## MISCELLANEOUS APHID NOTES 1.

BY JOHN J. DAVIS, WEST LAFAYETTE, INDIANA.

**Heteroneura**, new genus.

Erected for the species *Aphis setariæ* Thomas, which is herewith designated the type. The genus may be characterized as a typical *Aphis* excepting the venation of the hind wings which have but a single cross-vein (Fig. 26). The filament of antennal segment VI is quite long, being 6 to 8 times the length of the base of this segment. *Heteroneura* is analogous to *Carolinaia* in the venation of the hind wing and bears the same relation to the genus *Aphis* as *Carolinaia* bears to the genus *Rhopalosiphum* (*Siphocoryne*). The late Theo. Pergande recognized this as a distinct genus, and used the name here adopted on his slides of *setariæ*.

Fig. 26.—*Heteroneura setariæ* Thos. Hind wing.

*Aphis scotti* Sand.<sup>1</sup> is a synonym of *setariæ*. The description of *Aphis prunicoleus* Ashm.<sup>2</sup> is a clear characterization of this species and should be listed as a synonym. *Aphis bituberculata* Wilson<sup>2a</sup> is also a synonym of *setariæ* as determined by a comparison of the types by Wilson.

The writer's collection contains *setariæ* from Florida, Illinois, Indiana, Iowa, Kansas, Louisiana, Missouri, New York, Oklahoma, South Carolina, Texas and Wisconsin and our host records include, in addition to the reported hosts, the following: corn, sugar cane, *Eragrostis* sp., *Sorghastrum nutans*, *Panicum capillare*, *Paspalum dilatatum*, and Bermuda grass (*Cynodon dactylon*).

**Aphis heraclella**, n. n.

This new name is offered for *Aphis heraclii* Cowen, preoccupied by *Aphis heraclei* Koch.

**Aphis rociadæ** Ckll.

What is considered the same as Cockerell's *Aphis rociadæ*<sup>3</sup> was found abundant on the flower stalks of *Delphinium tricornis* at Lafayette, Indiana, May 9, 1913. The original description included only the apterous female, but certain characters are so unusual and prominent there appears to be little question as to the identity of our species.

Winged viviparous female: Head, thorax and abdomen very dark brown, apparently black. At base of each cornicle brownish. In some specimens the abdomen is distinctly shining dark brown. Antennæ and eyes black. Legs pale brownish, blackish at apices of femora and tibiæ, and tarsi black. Cornicles moderately dark brown. Wing veins black.

1. Bull. Ga. St. Bd. Ent., No. 17, p. 99, Oct., 1905.

2. Pacific Rural Press, Vol. 22, No. 1, p. 8, July 2, 1881.

2a. Ent. News, Vol. 25, No. 7, p. 298, 1 pl., July, 1914.

3. Trans. Amer. Ent. Soc., Vol. 29, p. 115, 1903. I have since had an opportunity to identify this species with certainty by comparing with the type, kindly loaned by A. C. Baker. October, 1919

Antennæ reaching to or beyond tip of abdomen; segment III with 4 to 8, usually 5, round sensoria, and segments V and VI with the usual ones; filament of VI quite long, being more than half longer than III and seven times the length of VI base (fig. 2a). Beak reaching almost to coxæ of third pair of legs. Cornicles (fig. 2b) of moderate length, being approximately half the length of antennal segment III, cylindrical, and flaring at the tip. Cauda (fig. 2c) broadly rounded and scarcely visible. Wing veins dark brown, the second branch of discoidal branching about  $\frac{1}{2}$  the distance from tip to where first branches,

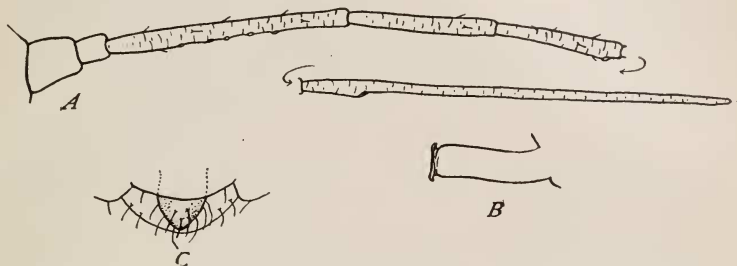


FIG. 27.—*Aphis rociadæ* Ckll. A, antenna; B, cornicle; and C, cauda, of winged viviparous female.

Wingless viviparous female: Entire body very dark shining brown, apparently black, excepting posterior end of abdomen which is of a slightly lighter brown. Antennæ apparently black excepting segment III, which is brownish. Legs as in winged female. Cornicles pale brown and black at tip. Cauda not apparent.

The antennæ similar to those of the winged female, except that they lack sensoria on segment III. Cornicles moderately short and cauda not exposed, but visible as a broadly rounded organ through the transparent body wall when mounted in balsam.

Since writing the above I have received from J. R. Parker sexes of what I believe may be this species, collected in Montana on larkspur. The males are winged and the noticeable differences from the winged viviparous female are as follows: Antennal segment VI, filament longer than III, but not one-half longer; segment III with 60 or 70 small, somewhat tuberculate sensoria, irregularly placed; IV with 12 or 15, and V with 10 similar sensoria; cornicles less prominent, being paler and less conspicuously shaped. The apterous oviparous female differs from the apterous viviparous as follows: Antennal segment VI filament, longer than III but not one-half longer; segment III with 15 to 20 small sensoria, irregularly placed on basal two-thirds; antennal hairs longer; cornicles as in male; and basal third of hind tibia swollen and bearing numbers of small inconspicuous sensoria.

#### *Aphis cuscuta*, n. sp.

This typical aphid which appears to be undescribed, was collected by P. H. Timberlake at Kaysville, Utah, on dodder (*Cuscuta epithimum*) growing on alfalfa. Live specimens were received from Timberlake Oct. 21 and Nov. 10, 1914, from which the following descriptions are made.

It might be noted here that from this live material we reared (*Lysiphlebus*) *Aphidius testaceipes* Cress. (Gahan det.) and a syrphid (*Syrphus opinator* O. S., Aldrich det.).

Winged viviparous female: Head and thorax black, abdomen pale green with three dusky spots on each side anterior to the cornicles and one at the base of the cornicles, an impressed dusky dot on each side of each segment, a brighter green transverse area on each side of the dorsal median line of the segments anterior to the cornicles, a small dusky spot on the dorsal median line of the cornicle-bearing segment, and a similar transverse dusky to blackish marking on the penultimate and last abdominal segments. Antennæ black. Eyes dark reddish brown. Beak black at tips. Legs with femora pale dusky to blackish at tips, tibiæ brown to blackish at tips and tarsi black. Cornicles, cauda, and anal plate black.

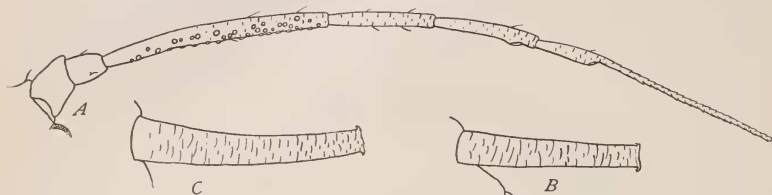


Fig. 28.—*Aphis cuscutæ*, n.sp. A, antenna; B, cornicle, of winged viviparous female; C, cornicle of wingless viviparous female.

Antennæ reaching about to base of cornicles, segments III and filament of IV subequal, the former being slightly the longer, III subequal in length to IV and V combined, segment III with about 40 to 50 circular, slightly tuberculate sensoria scattered irregularly over the surface, and the usual sensoria at distal end of segment V and VI base (fig. 3a). Beak not quite reaching to coxæ of the middle pair of legs. Wings normal, veins narrow, and blackish, the branching of the third discoidal nearer the tip than point where second branches. Cornicles moderately long and reaching just a little beyond tip of body in live specimens (fig. 3b). Cauda typical of the genus, being slender, conical and constricted near the middle. The prothorax with a tubercle which is hidden by the mesothorax in mounted specimens; also a rather prominent tubercle on each side of the first abdominal segment.

Measurements: (Averages) Length of antennal segments III, 0.508; IV, 0.238; V, 0.228; VI, base, 0.122; VI, filament, 0.405 mm.; cornicles 0.379 mm.; cauda, 0.151 mm.

Pupa: Head dusky, thorax pale yellowish green and abdomen marked as in apterous form, but lacking the black markings and bearing a row of rather conspicuous pulverulent spots on each side of the median dorsal line, and the entire body covered with a fine inconspicuous pulverulence. Antennæ dusky to blackish, excepting segment III and base of IV, which are whitish. Eyes dark reddish brown, almost black. Beak not quite reaching coxæ of middle pair of legs. Wing-pads blackish at tips. Legs whitish, the tips of tibiæ and femur and all of the tarsi blackish. Cornicles black and not quite reaching to tip of cauda. Cauda pale with an almost imperceptible duskiness.

Wingless viviparous female: General colour pale green (Smith colour key) and entire body covered with a very thin pulverulence. Head and prothoracic segment dusky to blackish, second thoracic segment dusky on either side of dorsum and a fainter dusky area connecting the two. Abdominal segments

anterior to cornicles with an impressed dusky dot on each side and a brighter green transverse marking on each side of dorsal median line; also marked with a black dot at base of each cornicle and a transverse dusky band on the dorsum of last abdominal segment. Antennæ black excepting basal two-thirds of III which is whitish. Eyes apparently black. Legs with fore pair whitish excepting at joints and the tarsi which are black; middle and hind pair similarly coloured except the femur is dusky to blackish. Beak pale with tip dusky to black. Cornicles black, and cauda pale greenish to blackish,

Antennæ with relative lengths of segments as in winged form, no sensoria excepting the usual distal ones on segments V and VI, base. Prothorax bearing a moderate tubercle near the base on each side. Beak reaching a little beyond coxæ of the second pair of legs. Cornicles moderately long, curved outwards (fig. 3c) and in live specimens reaching beyond tip of cauda. Cauda conical and typical of the genus.

Measurements: (Averages) Length of antennal segment III, 0.486; IV, 0.230; V, 0.226; VI, base, 0.122; VI, filament, 0.452 mm.; cornicles 0.527 mm.; cauda 0.191 mm.

Cotypes in the collections of the U. S. and Canadian National Museums, and in the writer's collection.

#### *Siphonophora achyrantes* Monell.

The type slide (Monell number 125x) of the species described under this name was examined by Monell and the writer in February 1914, and it was

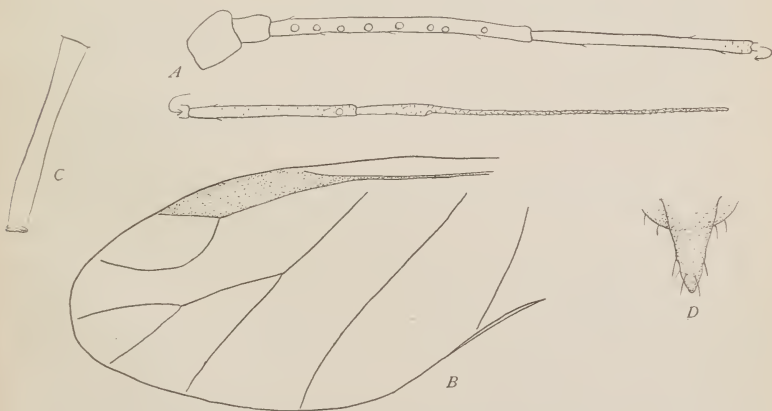


Fig. 29.—"*Siphonophora achyrantes* Monell." A, antenna; B, wing; C, cornicle; and D, cauda, of winged viviparous female. Drawn at St. Louis, Mo., Feb., 1914, from type specimen.

agreed that it was the same as *Myzus persicae* Sulz. The frontal tubercles and abdominal markings were typical. Other important characters shown in the accompanying drawings (fig. 4) made from the type.

#### *Macrosiphum ribiellum*, n. sp.

What is here considered as a new species was originally described by the writer as *Macrosiphum cynosbati* Cestl.<sup>4</sup> Since writing this description the writer has had an opportunity to examine the type of *cynosbati*, and finds it

4. Studies on Aphididæ. Annals Ent. Soc. Amer., Vol. 2, 1909, p. 38, figs.

quite a different species, a typical *Myzus*. This species will be discussed in a following paragraph.

*M. ribiellum* (fig. 5) seems to be quite different from any previously described species occurring on *Ribes*. It is not a typical *Macrosiphum* but probably can best be placed in that genus. From other species occurring on *Ribes* it may be separated as follows. The slightly swollen cornicles and fewer sensoria on antennal segment III of the apterous distinguishes it from *Macrosiphum lactuca* Schr. We are not familiar with *M. ribicola* Kalt., but Theobald gives it as a synonym of *M. lactuca* Schr. *Rhopalosiphum lactuca* Kalt. has much greater swollen cornicles which are conspicuously club shaped. Whether *R. sonchi* Oestl. is a synonym of *lactuca* Kalt. is questionable in my mind. In examining specimens which appear to be typical *sonchi* collected on *Sonchus* and typical *lactuca* collected on *Ribes*, I can make out no constant character to distinguish the two except that the filament of antennal segment VI in all my *sonchi* specimens is approximately one half longer than segment III, while in

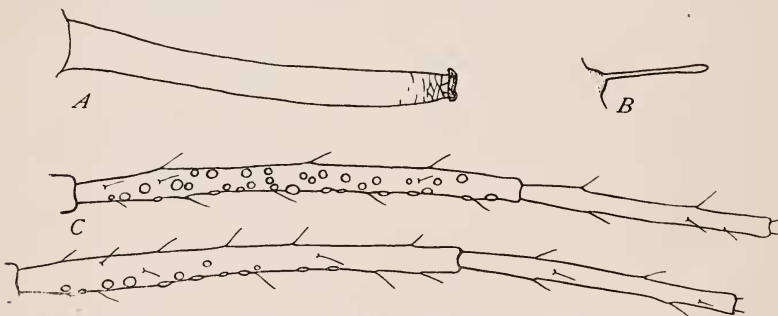
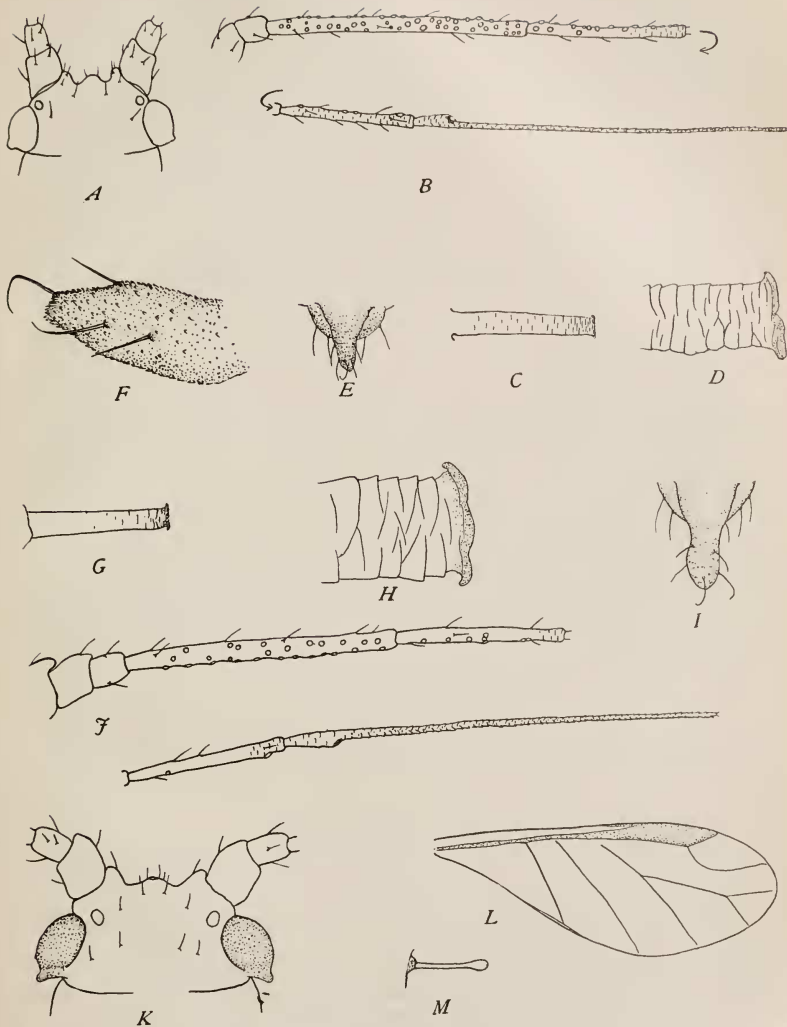


Fig. 30.—*Macrosiphum ribiellum*, n.sp.—A, cornicle of apterous viviparous female; B, antennal hair; C, antennal segments III and IV of winged viviparous female; D, antennal segments III and IV of apterous viviparous female.

*lactuca* filament of VI is only very slightly ( $1/7$  to  $1/6$ ) longer. *Rhopalosiphum brittenii* Theob. has large swollen cornicles like *lactuca* which at once separates this species. *Myzus ribis* L. bears numerous sensoria on IV and V, and has very slender cylindrical cornicles which easily separate it from *Macro. ribiellum*. *Myzus whitei* Theob. is separated by the occurrence of a number of sensoria on IV and V, but resembles *ribiellum* in the character of the cornicles. *Myzus dispar* Patch also resembles *ribiellum* in the character of the cornicles, but *dispar* differs by having antennal segment VI filament twice the length of segment III. We have not seen *Rhop. ribesina* v. d. G., but the cornicles are said to be distinctly club-shaped and the antennæ to bear sensoria (10–15) on antennal segment IV. *Myzus cynosbati* Oestl. and *M. houghtonensis* Troop have more sensoria on segment IV and the cornicles are short, cylindrical and typical of many species of the genus *Myzus*. *Aphis (Myzus) neomexicanus* Ckll. is characterized by antennæ much shorter than body, cylindrical cornicles which do not reach tip of abdomen, and by black markings on abdomen of winged female. *Myzus ribifolii* Davidson is readily separated by the cornicles which are typically *Myzus*.



*Myzus cynosbati* Oestl. A, head; B, antenna; C, cornicle; D, tip of cornicle much enlarged; E, cauda; F, side view of cauda; much enlarged, of winged viviparous female. Drawn from type specimen in collection of Prof. O. W. Oestlund.

*Myzus houghlenensis* Troop. G, cornicle; H, tip of cornicle much enlarged; I, cauda; J, antenna; K, head; L, wing; and M, antennal hair, of winged viviparous female. Drawn from type slide 9919a in the collection of The United States National Museum.

### *Myzus cynosbati* Oestl.

As already stated the species described as *cynosbati* by the writer<sup>5</sup> is a different species. The accompanying figures (fig. 6, a-f) were made from the type slide through the kindness of O. W. Oestlund. The type slide is labeled "17/86" and bears dissected winged viviparous female. Antennal segment III bears 50 and 53 sensoria, respectively, (two antennæ on slide) irregularly placed the entire length of segment, segment IV 22-24 sensoria, V with 3 and the usual distal one. One of the wings on the slide is deformed, having the discoidal vein only once branched; the other wing with the second branch noticeably nearer apex than where first branches. Head mounted on side and view of tubercles not obtainable. Cornicles *Myzus*-like, imbricated at tip, slender and relatively short. Cauda also short as shown in figure 6e. Legs rather long. Sensilla of antennæ slightly swollen at tip but very inconspicuously so.

*Myzus cynosbati* we have collected on flowering currant (*Ribes aureum*) at Oak Park, Ill., June 23, 1909.

A species closely related which may prove a synonym of *cynosbati* was described by J. Troop as *Aphis houghtonensis*<sup>6</sup>. We have had the opportunity to examine the type slide of *houghtonensis* through the kindness of A. C. Baker. The types differ from the types of *cynosbati* by having fewer sensoria on segments III and IV of the winged female, having 25 to 28 on III and 2 to 7 on IV, while *cynosbati* has 50 to 53 on III and 22 to 24 on IV. Also the antennal sensilla are conspicuously knobbed in *houghtonensis* and only slightly so in *cynosbati*. (See figure 6, g to m). However, we have seen specimens sent us by R. H. Pettit collected on gooseberry which show all variations between the types of these two species. Further study and breeding work seems necessary to settle the question of synonymy in this case.

### *Myzocallis alnifoliæ* Fitch.

The species referred to by the writer under the name *Callipterus alni* Fabr.<sup>7</sup> should be *alnifoliæ* Fitch according to Baker's key<sup>8</sup>.

### *Saltusaphis elongata* Baker.

The original description of this aphid was for the oviparous females only<sup>9</sup>. In the writer's collection is a slide of this species bearing a number of apterous viviparous females collected by J. G. Sanders on *Scirpus* sp. at Madison, Wis., July 13, 1912. It readily runs to *elongata* in Baker's key<sup>10</sup> and differs from the oviparous female only slightly as follows: Hind tibia not swollen nor bearing sensoria; antennal measurements, III, 1.34; IV, .65; V, .53; VI, base, .25; VI, filament, .42 mm., the total length noticeably more than that of the body.

5. Annals Ent. Soc. Amer., Vol. 2, 1919, p. 38.

6. Ent. News, Vol 17, No. 2, p. 59-60, 3 figs., Feb., 1906.

7. Jour. Econ. Ent., Vol. 3, p. 416, Oct., 1910.

8. Jour. Econ. Ent., Vol. 10, p. 423, Aug., 1917.

9. Can. Ent., Vol. 49, No. 1, p. 4, Jan., 1917.

10. Loc. cit., p. 2.